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Regional Municipality of Hamilton-Wentworth

SYSTEMS NEEDS STUDY

March 1, 1977

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THE REGIONAL MUNICIPALITY OF HAMILTON-WENTWORTH

A REPORT TO MANAGEMENT

FROM

R.E.M.I.C.

S Y S T E M S N E E D S S T U D Y

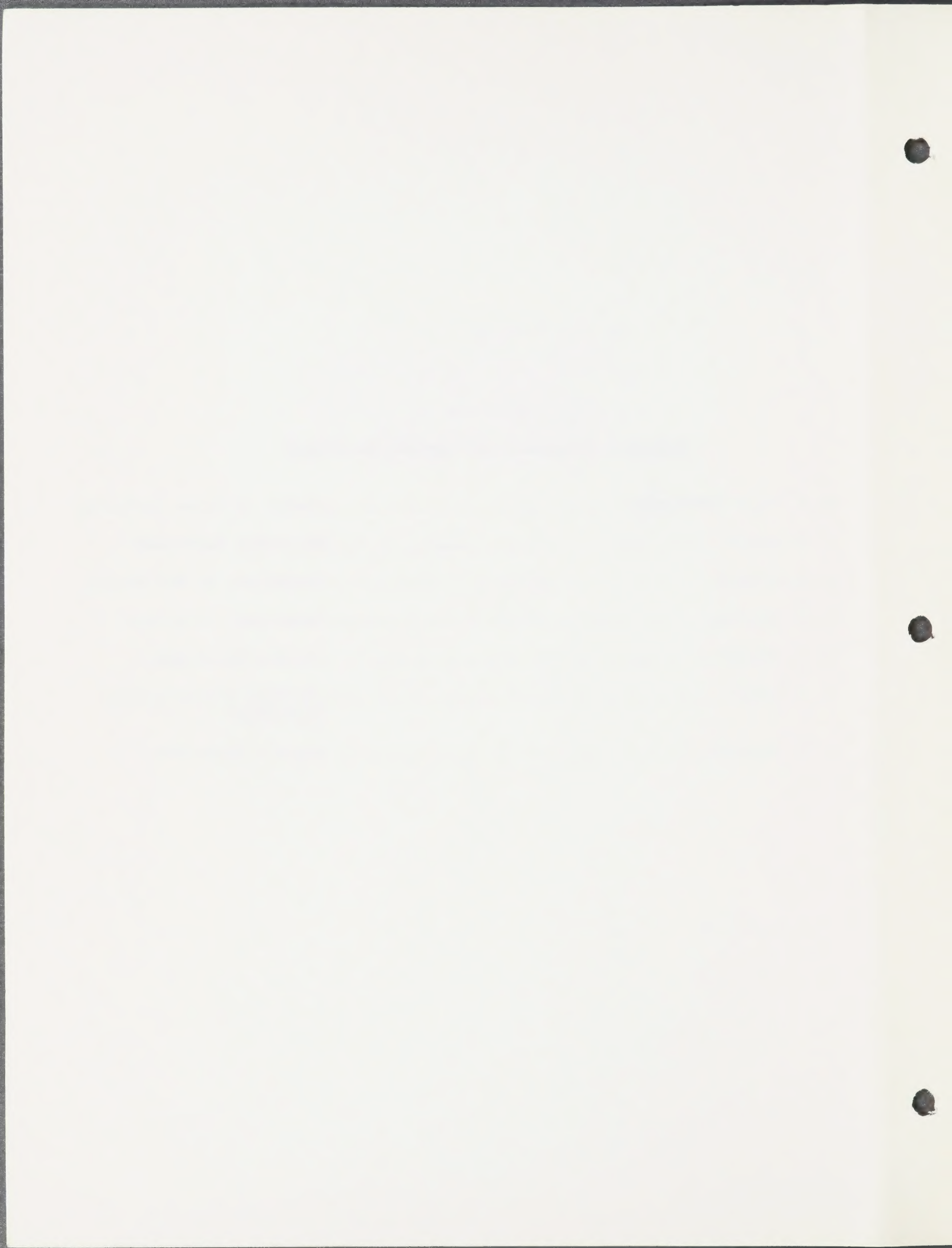
March 1, 1977



R.E.M.I.C.

(Regional Management Information Committee)

M. F. Brady (Chairman)	Social Services Department
J. A. Carter	Personnel Department
M. A. Chidley	Department of Engineering
R. T. Collings	Department of Police
D. F. Jervis	Finance Department
L. J. Lanza	Planning & Development Department
B. M. Tinsley	Clerk's Department

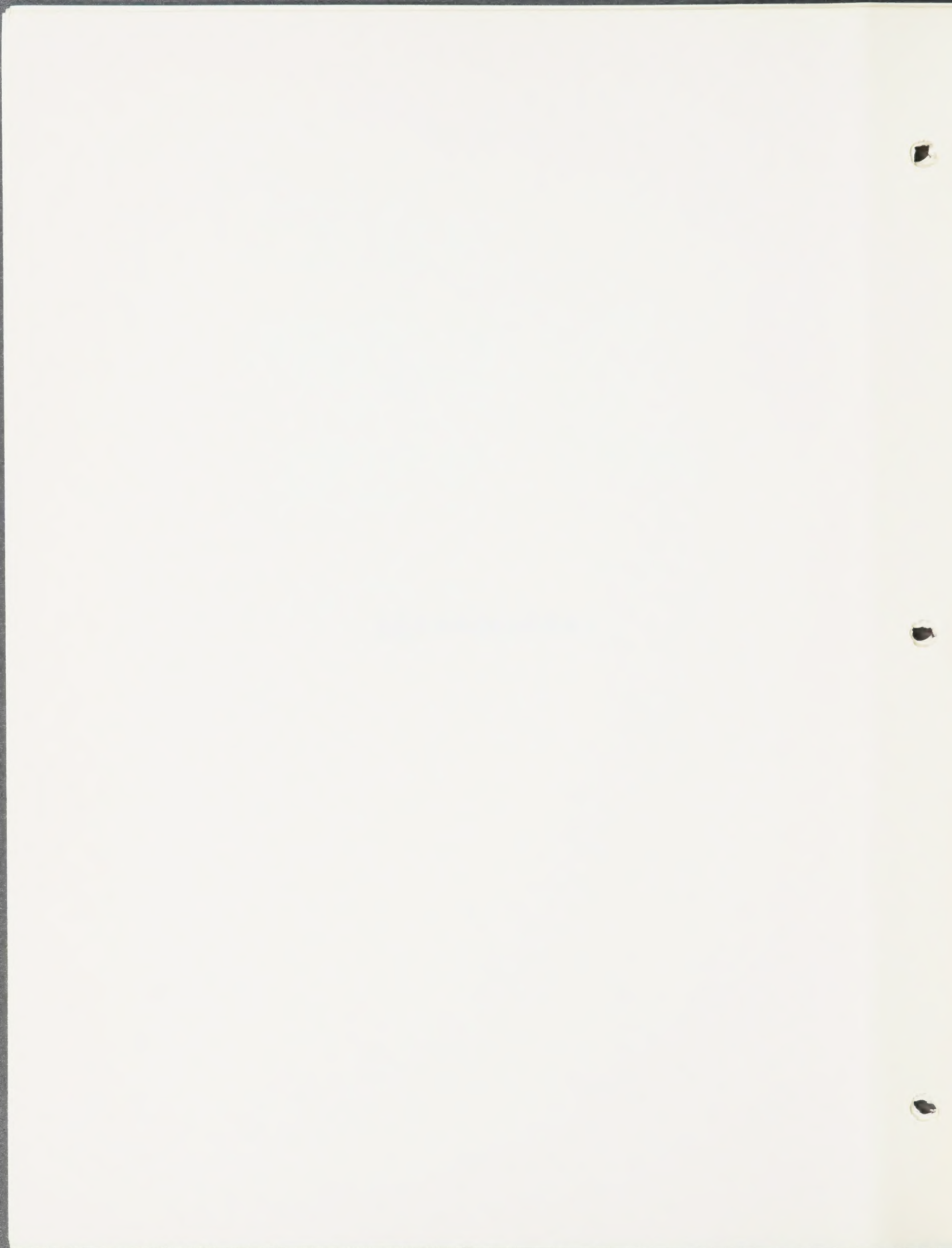


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I N T R O D U C T I O N



STUDY INITIATION

During the early days of the Region, the Management Team saw the need to co-ordinate systems activities throughout the administrative organization. To assist in this, a committee was appointed with a co-ordinating and advisory function.

The committee appointed is known as Regional Management Information Committee. Comments on REMIC's function follows, Section 2.5.

One of REMIC's initial recommendations to the Management Team was that a Systems Needs Study be conducted. The Committee felt the need to set some directions for the Region's systems function and to make a definite plan as to the structure of the systems function, computer facilities, etc.

The Management Team quickly accepted REMIC's recommendation that a study be conducted. It also accepted the Committee's recommendation of the Terms of Reference and Study Method to be used, as detailed following, and made REMIC responsible for the study and recommendations.

c) Systems Function

A recommendation will be made on the scope of the responsibility of this function and its place in the organization. Consideration will be given to the best approach to fulfilling this responsibility.

d) Computer Facilities

A recommendation will be made as to the best approach to meet the Region's needs for computer resources.

STUDY METHOD

Basically two methods of conducting the study were considered:

- i) Hiring a consultant
- ii) Using Regional staff

The consultant method has been used by other Regions with mixed success. A consultant can give the project full time effort and undoubtedly would produce the finished report sooner. A consultant's experience with other municipalities and businesses would, no doubt, be of value in preparing recommendations for Hamilton-Wentworth.

There are advantages to using Regional staff. It was felt that this method would be less expensive, and that Region staff might have a better insight into the Region's problems. Additionally, it was desirable that Region staff be used as the knowledge gained during the study would be retained and used in implementation of the recommendations of the study.

It was finally decided to use the Regional staff approach. D.F. Jervis, Regional Systems Co-ordinator, of the Finance Department, was chosen to conduct the study. It was understood that his findings would be reported to REMIC and that the final report would be a product of REMIC, not of Mr. Jervis alone.

Mr. T.B. Becke of the Systems Section assisted Mr. Jervis in parts of the study and his contribution is acknowledged herewith.

APPROACH USED

The approach used in the study was that of interview with Department and Section Heads of all Hamilton-Wentworth Regional departments, including those departments which function under independent commissions (Police, Health and Library), interviews with elected and senior administrative staff of the six area municipalities, interviews with technical staff of several other Regions, and interviews with others who it was felt could contribute to the study such as equipment and software suppliers, representatives of the Ministry of Treasury, Economics and Inter-Governmental Affairs, McMaster University, and the Southwestern Ontario Hospital Services. (The latter two organizations are involved in shared facility arrangements similar to those existing between the Region and the City of Hamilton).

A free style approach to the interviews was used and those participating were encouraged to think in terms of the ideal solution to meet the Region's needs as envisioned by each participant. They were also encouraged not to be influenced by approaches used by others, past experience, etc. It was obvious, however, that it was difficult for the participants to state their needs, desires, suggested approaches, etc., without being influenced by (especially recent) experiences, in trying to satisfy operational and information needs.

It was decided that simultaneous with the general interviews being conducted, one specific area would be studied in-depth. It was found that this in-depth approach provided reinforcement to the more cursory

study, while at the same time providing a corner-stone on which to build an integrated systems approach, and begin to build some standards of documentation, file concepts, etc.

Basically, Mr. Jervis conducted the more general interviews, and Mr. Becke conducted the in-depth study in the area of accounting information generally, and more specifically in the area of payroll and personnel.

Other studies and documents were reviewed including:

Computer Feasibility Study for The Regional Municipality of Niagara	Kates, Peat, Marwick
Waterloo Region Data Processing Study	M. Gregg E. C. Ostrander
A Discussion Paper For Administrators In Regional Government In Ontario	D. W. Roughley
Master Plan For The Development Of Management Information Systems (For Hamilton-Wentworth Police Department)	Decision Dynamics Ltd.
Computer Aided Dispatch and Record Entry System	Ontario Police Commission
Computer Assisted Public Health Information System	Ministry of Health
A Position Paper: A Regional Information System	L. J. Lanza
The Role of Electronic Data Processing in Municipal Government	D. F. Jervis

S T U D Y F I N D I N G S

EXISTING RESOURCES

Most of the major systems in the Region were developed by and for the City of Hamilton prior to the Region's existence. When the Region came into existence, it was necessary to meet such requirements as Payroll, General Ledger and other management information needs immediately. The Region is indeed fortunate that the City of Hamilton's systems in these areas existed and that the City very willingly allowed the Region to make use of them at no charge other than the costs of minor re-programming to change report headings, etc. The Committee would like to recognize the co-operation of the City of Hamilton staff in arranging the original alterations and in maintaining the systems since that time.

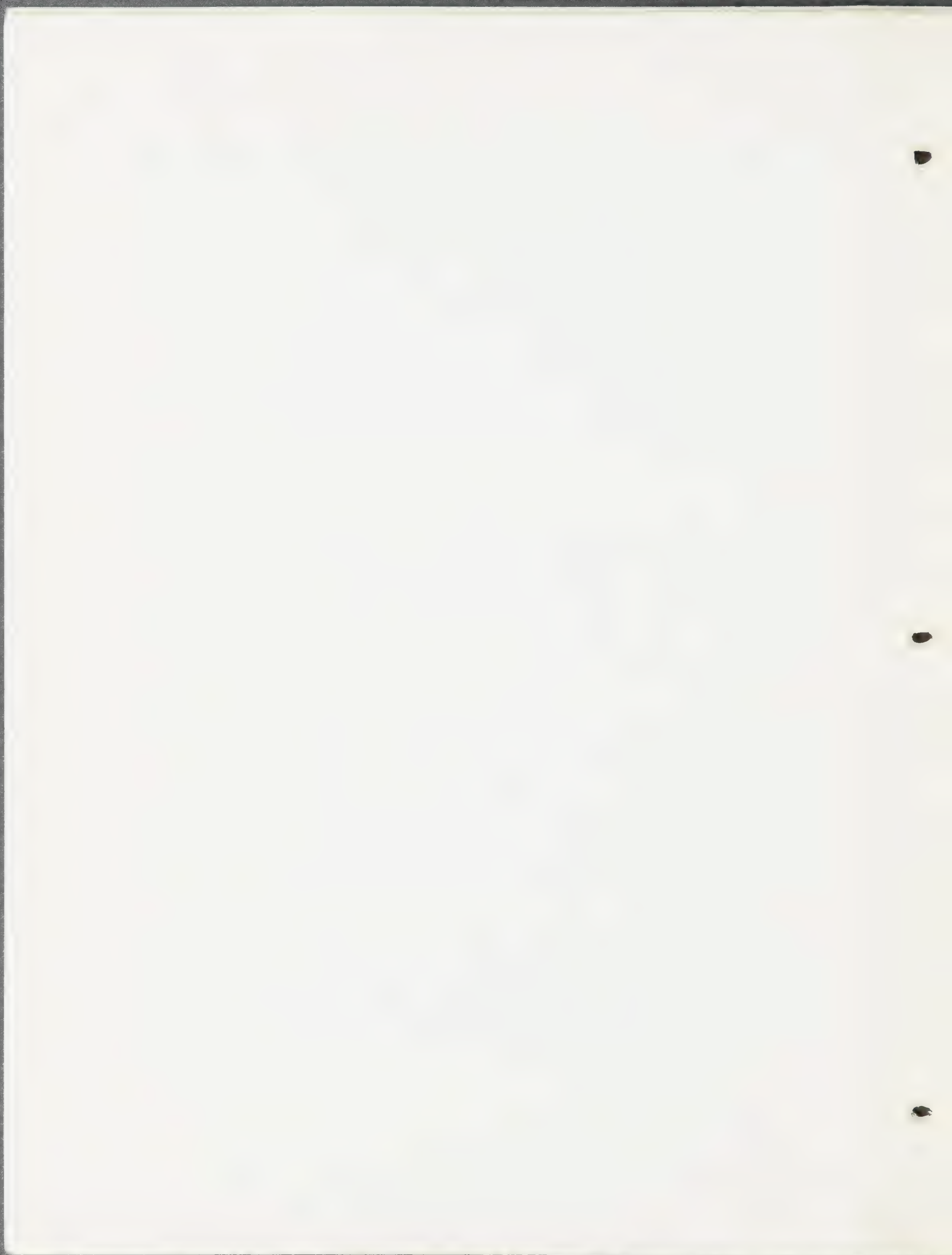
Although the Region has profitted from being able to pick up existing City of Hamilton systems, this approach has not been without its shortcomings. The systems relationships, file design concepts, methods of presentation of information, etc., were all designed for a single level organization and the organizational structure, information needs and management style of the City of Hamilton. These do not always satisfy Regional needs. As an example, the City of Hamilton has for several years been supplied with a computer tape of assessment data by the Province of Ontario. The tape has traditionally been used by the City for taxation and election purposes during which it underwent format changes for production of planning data. This procedure has been continued since the creation of

the Region; it has not, however, been compatible with the Region Planning Department needs. It requires that the Planning Department arrange its schedule around the schedule of the City taxation and election activities. It also results in the presentation of parallel sets of information for "City" and "other" data in various reports, rather than a total Region set which would be more desirable from the users viewpoint. This and other similar situations are indicative of the problems faced in some instances in trying to fit to Region needs, systems designed for City requirements.

The City of Hamilton presently has an IBM 370/135 computer which serves the City and Region. A decision was recently made by City Council to replace the 135 with an IBM 370/148 and this equipment has been ordered for delivery in February, 1978.

The City's charges to the Region for both computer usage and for systems and programming time are designed to recover cost only and do not include a profit factor. The Region's use of these services do, of course, help cover the overhead costs associated with the City's operation. The City is desirous that the present arrangement continue.

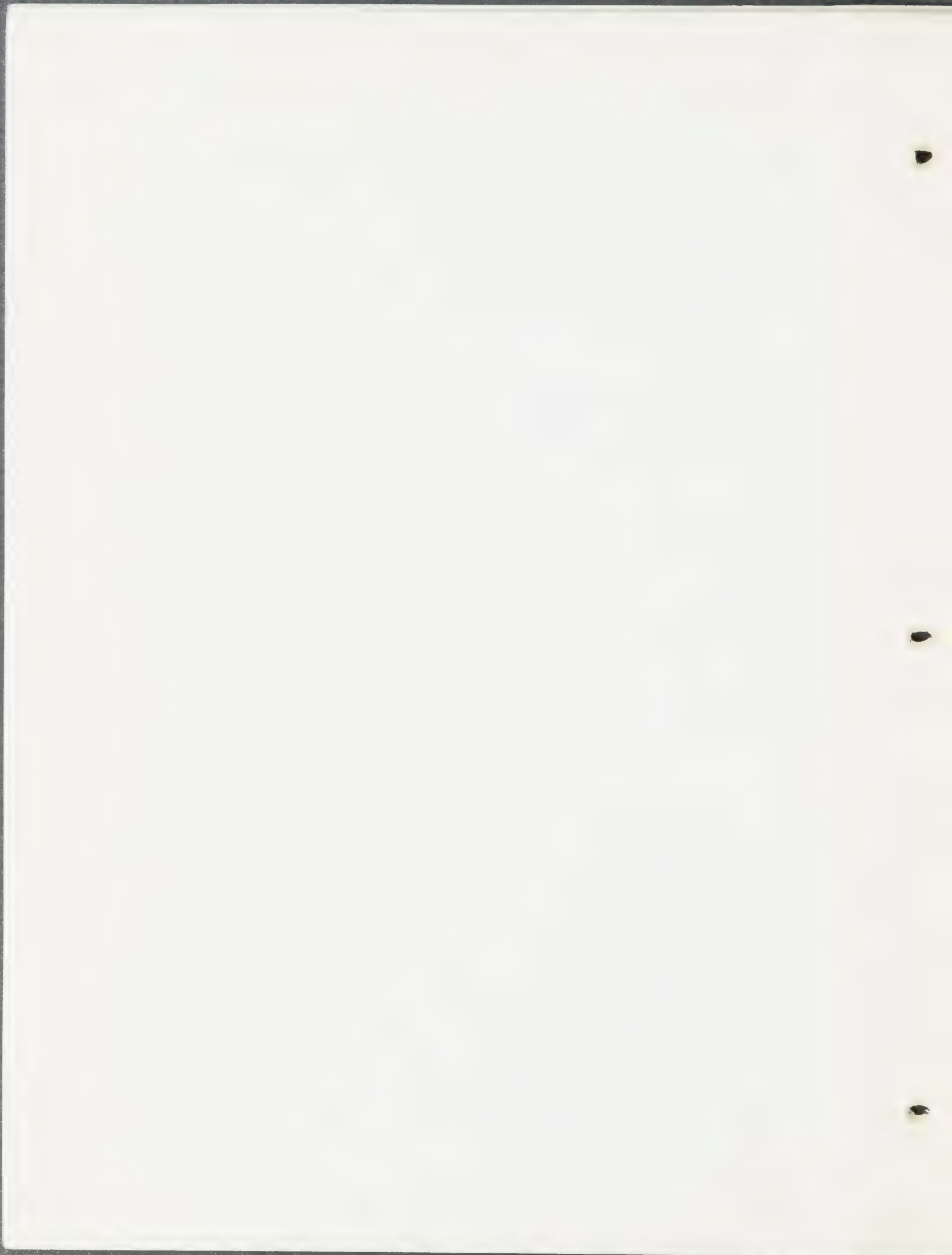
The Region is also making use of other computer services. These include the CALL and CMS services being used through IBM facilities and FIPLAN being used through Canada Systems Group. These systems are being used



through typewriter terminals to large-scale computers provided on a timesharing basis by these vendors. Much of the processing done on these terminals is designed on an interactive basis so that the user is able to get immediate response to his problems, rather than having to wait for the turnaround associated with traditional batch processing.

Much of the system development on the timesharing service systems has been undertaken by user department personnel, with technical assistance as necessary from the Regional Systems and/or vendor staff. This has proven to be a very successful approach. It has helped to overcome the lag sometimes experienced in waiting for the availability of professional systems staff. It has also helped to develop a more intimate relationship between the user and the computer and encouraged him to accept the computer as a business tool with which he is comfortable, as opposed to a mysterious black box mystique. Reference is made later to other services being used by the Police Department.

As well as using many City of Hamilton systems and the City of Hamilton's hardware, the Region has utilized the City's staff to meet much of its systems and programming needs. The Region hired a systems co-ordinator in mid-1974. His function has largely been to co-ordinate and liaison with the City and other suppliers of service, to begin setting directions, establish standards, etc., and latterly to work on this particular report. He has done very little in the area of original systems design. A second systems analyst was added in 1975. His effort has been directed in the area of examining the present accounting-related reports and developing



proposals for new accounting and management information-related systems. The first phase of such a system is the Payroll/Personnel system which is referred to in more detail later in this report. These two people are the only professional systems people in the Region. They are organizationally placed in the Finance Department, although it is understood that they have a responsibility for advising on systems questions to all departments and co-ordinating systems efforts throughout the Region.

The Regional Systems people feel the need for better control of, and more complete documentation than presently exists for systems in use throughout the Region. This documentation weakness has also been noted by other areas of the administration and in particular by the Region's auditors. Systems staff feel the need to develop some consistent approaches to procedure writing and documentation standards for all Region systems. They feel the need to obtain a better understanding of the hardware facilities and software products for the major computer system being used on Region projects. They also feel that in order to properly plan for the on-going systems needs of the Region, they must be better informed of on-going plans for updating and alteration to the computer facility.

The total cost of systems and data processing work for the Region is .5% of the total expenditure budget (1977 budget). This is lower than most municipalities of similar size.

HAMILTON-WENTWORTH REGIONAL DEPARTMENTS

It was pleasant to find in discussions with Regional senior staff that there was almost unanimity of opinion on most items addressed in this study. The recommendations contained herein are those of REMIC, but in fact almost parallel a consensus of senior staff opinions.

It was felt by all department heads that a central systems function should be established in the Region to serve all departments. The scope of this department should be wide in nature so that it has the responsibility of co-ordinating all systems work, standard procedure preparation, forms design standardization and co-ordination, and business communications co-ordination. It was felt that this group should be of a size to handle the normal volume of responsibility, and that for major projects the tendering approach should be used.

It was stressed that the Systems department should be a true service function to all user departments and whereas it should have responsibility for co-ordination and standardization of systems efforts, the final decision on data gathering and outputs of specific applications should be left with user departments, not technical systems people. There is obviously a fear of a systems department having decision-making authorities beyond technical matters.

It was widely agreed that Systems group should answer to a Commissioner of Administrative Services, if and when this position comes into existence, (see Section 3.5) and that in the absence of such a function, the Systems group should answer to the Regional Co-ordinator. The alternative of having the Systems function within the Department of Finance found little support. It was felt that too often this approach resulted in the Commissioner of Finance assuming ownership of the resources and overly influencing systems approaches, priorities, etc. It is fair to point out that most people's opinion was that this situation was unlikely to happen with the incumbent Commissioner of Finance, but that the decision must be made aside from the personalities of incumbent staff.

There was a common reaction from representatives of both Macassa Lodge and Wentworth Lodge that they would want to see extreme caution exercised in consideration of any systems changes which would remove control and access to information from the Lodges. They feel the need for better operational information and would be quite amenable to co-operating in any systems efforts to this end but pointed out strongly their feeling that any attempts to further centralization would handicap them in their responsibilities for operation of the Lodges.

There is a widely held opinion throughout the Region administration that there should be a change from the present working arrangement with the City of Hamilton, whereby the Region depends on the Systems staff of the City for most of its systems and programming work. The feeling is that the City Systems people are not able to react satisfactorily to Region management's needs and that Region management personnel do not have sufficient control over systems work being done on their behalf.

Generally speaking, department heads are content to leave the decision on how to satisfy the Region's needs for computer facilities to technical people. There were, however, strong comments to the effect that whatever approach was used, the Region should have control of its own computer usage. It was stressed that if the ultimate decision from this recommendation was that the Region would continue to use City of Hamilton facilities, it should be on the basis of a shared facility and the Region people involved should have a greater degree of input into decisions regarding scheduling, priorities, etc.

One of the most common needs as identified by department heads is for better operational control systems to supplement present dollar reporting. Such systems must be accessible to individual departments and responsive to operating needs. There is a need for a revised approach to budgetting which will express information on a functional basis and assist operating departments in their management control.

One of the key needs, as identified by department heads, is the need for an improvement to the existing "unencumbered balance" reporting as an operational control system. This would include streamlining the present cumbersome method of building the budget; it would provide for expression of budget activity in a manner tailored to operating department needs; it would provide the information directly to the user department, formatted to its needs; it would minimize the transaction turnaround time. In addition, the system would provide operating departments with control reporting, expressed in other than the traditional dollar basis.

A second key need is to build a vehicle whereby each department can retain its geographic files to serve its needs, while at the same time being in a position to exchange information with other departments, governments or agencies who use a different approach to geographic identification.

There is a need for an inventory of hard services, with maintenance history; also a need for an automated approach to inventory control for materials and supplies, with direct input to the accounting system. Several departments expressed the desire for a common approach to project identification and filing throughout the administration. Other more specific needs were identified but generally can be included within the scope of those mentioned above.

There is a sense of urgency to know "where we're at and where we're going" with respect to computer hardware and features and systems resources. Obviously, the results of this study and acceptance of plans for moving in a definite direction are being awaited anxiously.

Police Department

The Police Department is in the midst of considering its approach to operation of its management information system. The department presently is part of the CPIC (Canadian Police Information Centre) system, which gives it access along with all other Canadian forces to a central file which records such things as Criminal Name Index, Criminal Record Synopsis, etc. It has recently entered into an agreement with McMaster University to supply data processing resources to classify and analyze recorded "calls for service".

During 1975, the Department co-operated with several other Police Departments in the Province of Ontario and with the Ontario Police Commission in putting together a proposed system known as CADRE (Computer Aided Dispatch and Records Entry). The CADRE proposal describes a very comprehensive system to be built around small dedicated computers in the Police headquarters with communication links to vehicles for dispatching purposes. The data would be captured and then form the basis of management information reporting for operating personnel. The idea was that similar systems would be installed in the several participating police forces, taking advantage of one systems effort to satisfy all of the participating departments. It was anticipated that some beginnings might be made on the system during 1976 with substantial funding being made available by the Province of Ontario. This funding has not, however, been available and there are no concrete plans to move forward with the project in Hamilton-Wentworth.

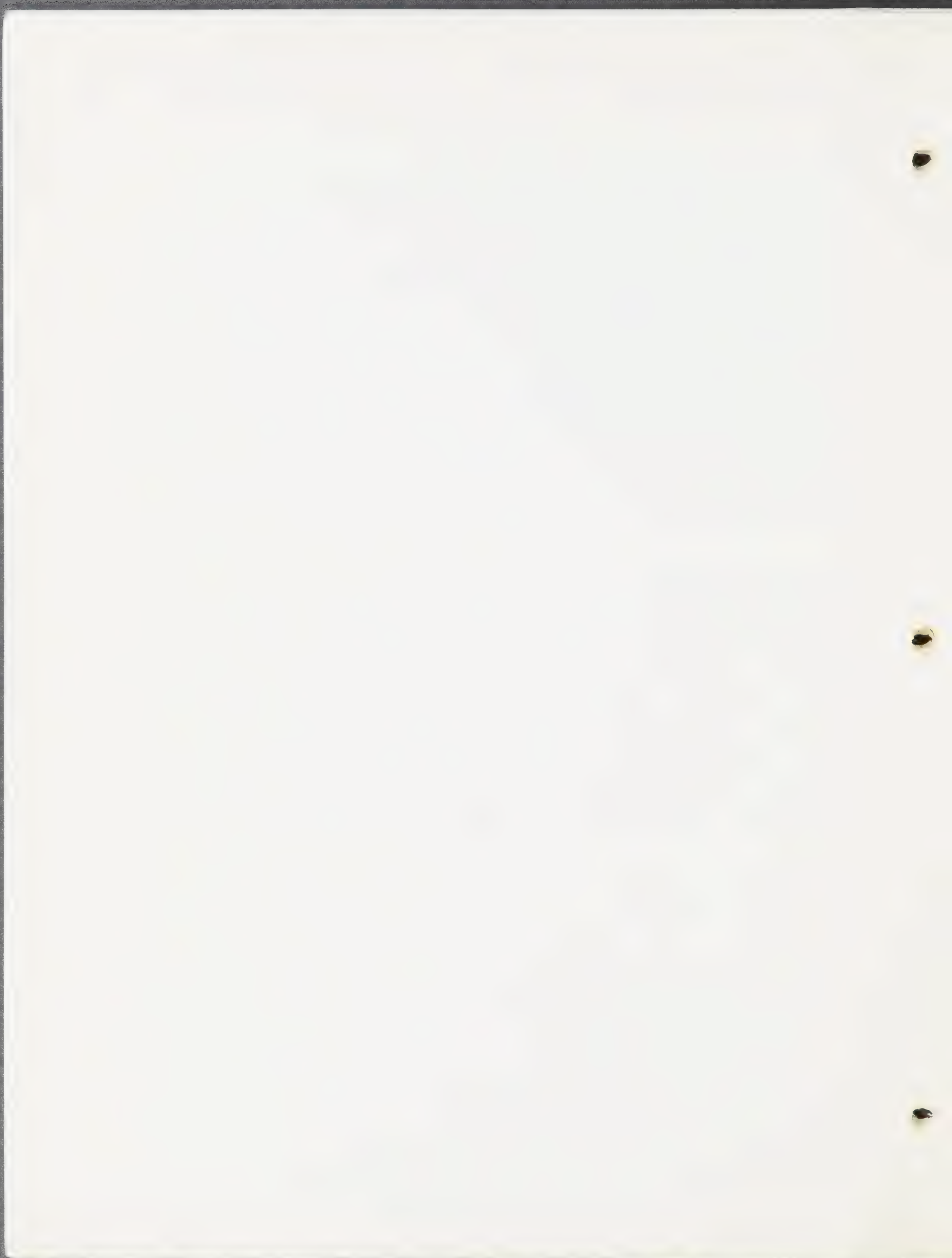
Decision Dynamics Limited recently conducted a survey of the Police Information System working on a grant from the federal government. Their recommendation was that the Police Department begin in 1977 to build an information system, completing it in 1980. Recommendation was for a staff of five people to be hired in 1977, growing to 19 in 1980. The projected cost of the system development and operation to the end of 1980 was \$2,225,000. The report recommended that the Police Department hire the necessary staff, arrange its needs for equipment, etc., rather than depend upon a central systems group and/or joint efforts with other Regional departments. The consultant's reasoning was that this approach was necessary in order to assure that the Department could exert the necessary control over its own requirements.

Wentworth Library

The Wentworth Library is at the present time functioning with fully manual systems. Because of the relatively small volume of throughput, it is unlikely that any type of automated approach for this Library alone should be considered. The Library staff, however, is at the present time looking at involvement in automated systems available from groups with which it has association. Such an approach would probably begin with cataloguing to be followed by ordering and possibly circulation control. The Regional Systems Co-ordinator is assisting Library staff in evaluating approaches that could be taken.

Department of Health

At the present time, the Health Department is making use of two systems provided by the Ministry of Health. The CAPHIS system records public health inspections, situation is found, etc., and assists in scheduling. The other system records function time of public health nurses and assists in scheduling of this group. Both of these systems are made available to the Health Unit at no charge from the Ministry of Health.



REGION AREA MUNICIPALITIES

This section will speak mainly to the five area municipalities other than the City of Hamilton. The City of Hamilton's situation is unique in that it already has a substantial computer and systems department to handle its own needs. Within the foreseeable future the Region should not be thinking in terms of any necessity to offer services to the City.

The area municipalities all expressed a very co-operative attitude in looking to using a central systems service. There was, however, obviously a reluctance to depart from the present methods being used in most municipalities until something better was indicated. Three of the five municipalities (Dundas, Stoney Creek, Flamborough) each have a small computer facility which is serving their accounting needs, and would want to adopt a different approach only if there was strong evidence that another method would be an improvement. The exception seems to be the Town of Stoney Creek. Possibly because of the rapidly expanding nature of the work there, Stoney Creek people seemed more anxious than the others to become involved with a professional systems group, and to make use of computers and other modern business tools and techniques. Stated simply, whereas the four municipalities of Ancaster, Dundas, Flamborough, and Glanbrook would probably be quite willing to become involved with "proven" systems, the Town of Stoney Creek would be willing to do some pioneering in co-operation with a central systems group.

It should be noted, however, that the five municipalities were unanimous in their opinion that a central systems group should be established and available to serve municipalities as needed. The opinion was also expressed that such a group should initiate creation of and co-ordinate the activities of a committee of representatives from each municipality in the Region. Such a committee would be responsible for consideration of common approaches to meeting operational and information needs and use of computers and other modern tools. The municipalities of the former County of Wentworth along with the City of Hamilton have historically co-operated in the areas of taxation, elections and others; the thought is that this could be expanded and that the services of a professional systems group could act as a catalyst.

The area municipality representatives expressed very strong opinions as to their fear of loss of control if central processing became into being. They stressed that a requirement of any type of such co-operative processing would be that the control of the data entered to a system and the timing and type of information produced, remain under local control.

OTHER ONTARIO REGIONS

Most of the other Regions in Ontario are at some stage of study or implementation of a structure to meet their systems needs. In all cases the activity has been initiated and/or implemented within the Department of Finance.

The Regional Niagara study done by Kates, Peat, Marwick, recommended a central systems activity utilizing the City of St. Catharines computer facilities. Little progress has been made in the implementation of this study. The City of St. Catharines computer is being used on an across-the-counter basis to supply payroll and other Finance Department needs. They have a small stand-alone computer in the Engineering Department to handle Maintenance Management and a small stand-alone computer in the Social Services Department to perform GWA payment and related needs. There is some data transfer, but nothing that could be described as a true approach to integrated systems.

The Regions of Peel, Durham and Waterloo have each adopted the same type of approach to fulfilling their needs and made good progress in putting them into operation during 1976. They have each installed an intelligent terminal with communication lines to a large host computer. Peel and Durham are using a commercial supplier of computing services to supply their needs for computer power while Waterloo is using the City of Kitchener. These Regions have the power of a large-scale

computer available to them, but are paying only for hours used. By purchasing only computer time and operating on a shared time basis, they are able to control their own needs, both developmental and day to day operation.

Metropolitan Toronto, working in co-operation with the City of Toronto, adopted an approach similar to that existing between the Region of Waterloo and the City of Kitchener. Metro goes "outside" to fulfill some of its specialized needs, but the bulk of its processing is done on the City's computer, for which it pays on a metered basis. Metropolitan Toronto has a Management Information Systems Department, answerable to the Chief Administrative Officer which is responsible for all of the organization's systems efforts. Through terminals to the City's computer, Metro management has control of its own processing. The arrangement seems to work well.

REMIC

This staff committee was constituted early in the Region's existence, with the following terms of reference:

This is a standing committee, responsible to the Management Team. Members will be appointed by Management Team staff and will serve until replaced or otherwise removed. The Committee will make recommendations as it deems appropriate to the Management Team.

The Committee has the following ongoing responsibilities:

1. To act as a forum to co-ordinate the efforts of all departments in their quest to assemble, store and retrieve information in an organized, efficient manner.
2. To establish information management systems priorities.
3. To inform Regional Managers of available systems or information and offer advice as requested on specific systems matters.
4. To keep the Committee attuned to the "state of the art" in information management systems.
5. To consider any available system or device applicable to the efficient management of the information needs of the Region.
6. To review and recommend policy to satisfy the systems, programming and hardware needs of the Region.
7. To make available systems oriented educational vehicles to help broaden systems appreciation among Region personnel.
8. To make available the Committee's expertise to area municipality administrations.

The Committee is composed of seven members, one each from the Clerks, Engineering, Finance, Personnel, Planning, Police and Social Service Departments.

This Committee appears to be functioning well and its work is well received by management personnel. It serves as a good forum for idea exchange and cross-fertilization is evident. The Committee appears to have quickly adopted a "big picture" outlook and there is little evidence of parochial thinking among the members.

REMIC has to date concentrated its efforts on organizational matters, development of procedures, etc. This includes development of policies for sharing of systems and data processing costs between departments, standardized request forms for service from the City of Hamilton, the recently approved Agreement for Service with the City, etc. It has also involved itself in problems involved with delivery of service and in priority establishment. Most recently, its major emphasis has been upon the report which is in the reader's hands.

OBSERVATIONS & CONCLUSIONS

REMIC RESPONSIBILITIES

During the early stages of the Region, REMIC found it necessary to be involved with operational and procedural matters. This was necessary in order to establish policies and practices, for which there was no precedent, and it is fortunate that a group such as REMIC existed to address these matters.

REMIC should now begin to shift its emphasis towards developmental projects and improved management information. In doing so, it must have in mind that its function is to identify areas worthy of study, establish priorities, set goals, recommend resources to be used and give general direction. Its members must be careful to avoid becoming bogged down in systems details, excepting where individual line functions are involved. The committee must also develop and maintain a broad perspective of its responsibility, and not overly concentrate on computer-related systems.

Whereas Management Team members are aware of and appreciative of the efforts of REMIC, knowledge of its function and activities are not well known at lower levels. The management level, one step below the Management Team, should especially be informed because they are in the best position to take advantage of REMIC's services. REMIC should promote this awareness.

In addition to promoting an appreciation of its function and activities, REMIC should also become active in developing efforts to increase a general awareness of computer system capabilities, the most modern approaches to solving business problems, etc. A management group, which is knowledgeable in these areas will be increasingly aggressive in making use of the most modern business tools.

As they become more familiar with terminology and concepts used by technical systems people, the natural communications gap will shrink. REMIC should develop a formal plan for a continuing update in these areas - first for the members of REMIC, and then for other middle and top management personnel. The possibility of extending such a program to include elected officials should be considered.

Upon approval of the recommendations contained in this report, REMIC should play a major role in their implementation. Obviously, when a systems function is established, the line personnel in charge will have primary responsibility for the implementation of many of the recommendations. Members of REMIC should, however, accept as a personal responsibility the task of assuring the team involvement approach on all systems projects. REMIC should accept the responsibility of monitoring the implementation of the specific recommendations contained herein and report progress periodically to management.

SYSTEMS FUNCTIONThe Need For A Regional Systems Department

It is abundantly clear that the present arrangement with the City of Hamilton for systems and programming service is not fulfilling the Region's total needs. City people have put forth their best efforts to meet the demands of the Region and are to be commended for their attempts. However, the department is not, in our opinion, equipped to handle, in addition to its primary responsibility, the demands of a second large user with a different organization structure, information needs and management style.

A result of this situation has been a tendency in many cases for Region departments to seek avenues other than use of the City's computer to solve their needs, because use of the City's computer has been interpreted as implying use of the City's Systems personnel also. If this tendency continues, it will result in the Region spending sizeable funds on computer services while at the same time the computer equipment being paid for by Hamilton taxpayers is being used at less than its total capacity.

It is REMIC's feelings that the best solution to this situation is to establish a systems department within the Region organization. This department would be responsible for all systems activity within the Region administration. Some minor systems activity would continue to take place in individual departments, but the systems department would

have the responsibility for overall co-ordination and no systems activity would take place without its involvement. It is anticipated that the department would be staffed to handle normal systems requirements and that peak demands and major projects would be offered to tender. The tendering activity, and monitoring of tendered projects would be the responsibility of the systems department.

It is not suggested that when a systems section comes into being in the Region, co-operation with the City of Hamilton would be ended. There are many functions which are common to the two municipalities (and indeed with all area municipalities), and the building of common systems is the obvious approach. Such systems should be developed in co-operation between all seven municipalities involved. Further reference to the desire and approach to greater co-operative effort will be found later in this report.

Additionally, the Region Systems department should engage the services of the City of Hamilton personnel when it would be to the Region's advantage. Obviously, the prime use of this arrangement would be for purposes of maintenance, etc., to existing systems which were designed by the City of Hamilton personnel who therefore have expertise in the particular systems involved. It is suggested when the Region makes use of the City's services, that on all major tasks (defined as being more than one man week effort), a price be negotiated before the work commences.

This will eliminate any misunderstandings to the benefit of both parties at billing time. It is noted that the agreement presently in affect between the City and the Region provides that documentation on all systems developed by either the Region or the City will be mutually available to the other at no cost. It is strongly recommended that the intent of this clause in the agreement continue. It is also recognized that when the Region places major systems and programming functions out to tender, the City of Hamilton may well wish to tender. This would be encouraged.

It should be pointed out that there is no thought that when the Region accepts responsibility for its own systems work, all priority conflicts will magically disappear. Obviously, there will be conflicts between the demands of various Regional departments placed on the Systems group. Region management, however, will be in a position to establish priorities, be appraised of schedules, monitor the progress, and generally control the situation.

Cost

The cost of having Region staff perform systems and programming work would be no more expensive than the present arrangement. Systems Analysts and Programmers hired by the Region would be paid exactly the same rate as Systems Analysts and Programmers on the City of Hamilton staff. The City's charges to the Region for Systems Analyst work in

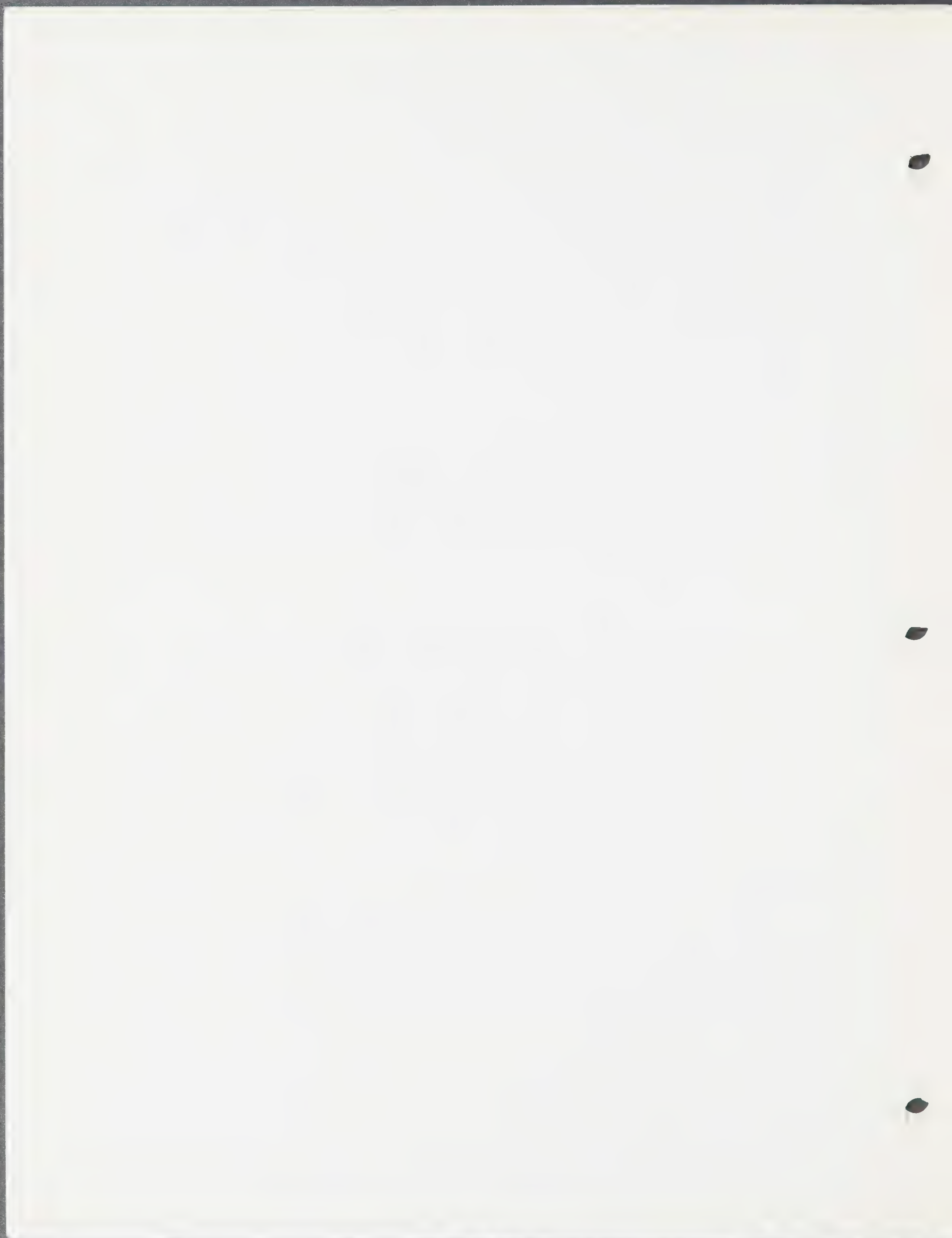


1976 was \$19.72 per hour. The cost of having the same function performed by a regional employee was \$14.03 per hour (includes 17% fringe benefits, but does not include overhead - space, light, heat, etc.). During 1976, total cost of purchased systems and programming work was \$202,074.78. In line with the recommendation that we would staff for minimum needs and purchase some service, it is felt that the same work could have been handled with an expenditure of less than this amount. This is not intended to suggest that \$202,074.78 would be used as a base for a salary budget for a systems department. A systems staff should be built with a gradual swing from purchased service to staff and a budget based on needs, which might have no relation to 1976 costs.

Having the Region accept responsibility for its systems work might prove financially beneficial to the City. We are aware that during 1976, the City found it necessary to purchase systems and programming services from outside suppliers. Presumably, a reduction of the Region's demands will eliminate or reduce the necessity for this.

Scope of Systems Department

In addition to the responsibility for design of computer and manual systems, the Systems Department would have responsibilities which are at the present time spread through the organization in a rather haphazard



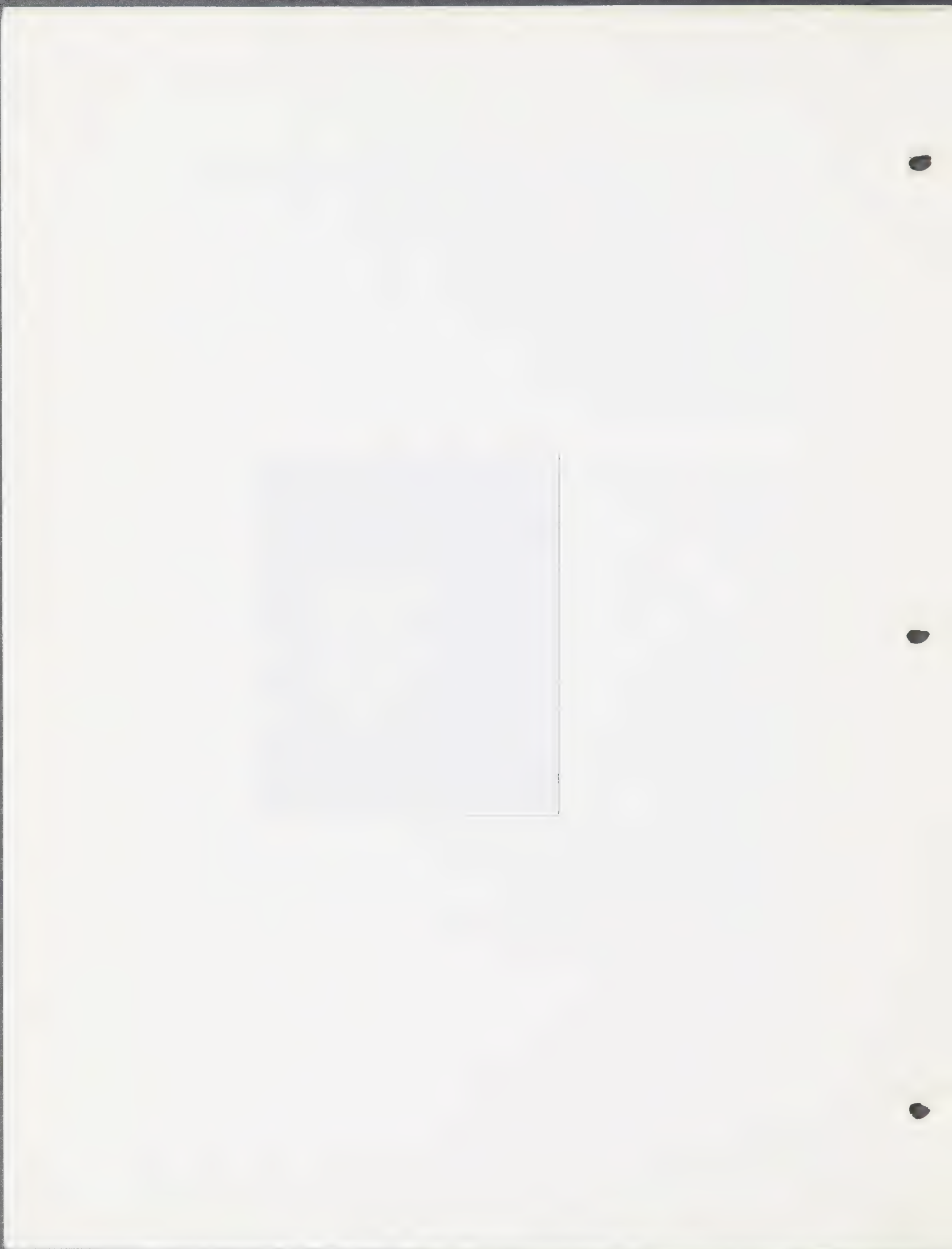
manner. We refer specifically to the three responsibilities of standard procedure development, forms design and control and business communications. It is felt that having responsibilities for these functions co-ordinated in one area rather than the present fractured basis will result in better co-ordination and standardization of the approaches.

There is a tremendous amount of work that should be done in the area of standard procedures. All organizations have procedures; the variance is in the quality and format of documentation; those in use in the Region are documented in a rather unorganized manner. This lack of a common, organized approach to formal written procedures lends itself to confusion, more difficulty in training new employees, and lack of standardization in the organization. Writing of procedures would remain the responsibility of individual departments, but Systems would be responsible for establishing standards and overall co-ordination.

The situation described with regard to standard procedures is also reflected in the forms area. At the present time, there is no attempt whatsoever to co-ordinate forms used throughout the Region, standardize design, etc. We find that several departments are using forms of alternate design to do exactly the same job. As before, rather than

a criticism of the department involved for designing their own forms, this reflects a weakness in the organization that a function does not exist which would serve operating departments in their forms design. The forms design group within the Systems Department would have responsibility for the design of all forms used throughout the Region, maintenance of a forms catalogue, up-to-date descriptions of forms functions and promotion of standardization of design.

In the area of communications, it should be emphasized that the recommendation is for the responsibility for design of business communications, not operational communications used in such departments as Police, Engineering, etc. At some future time, there may well be a need to bring closer co-operation and consolidation in this area. This, however, might come as an evolutionary development and is not anticipated initially. It should also be pointed out that the recommendation here is for the design of systems to be used for communications; it is not anticipated that the Systems Department would have any responsibility for the day to day operation of these areas. We do, however, feel there is a requirement for someone knowledgeable to have responsibility in the area of design of communication systems on an overall basis to assure that the Region is getting the best service for its dollar.



Organization

The first step in the establishment of the central systems function should be the appointment of a Director of Systems & Data Processing. Approval for such a position should be granted and the position advertised. When the position is filled, the incumbent should work very closely with REMIC in the implementation of the total recommendations of this report. It is anticipated that not too much progress would be made until he/she is hired. REMIC should assist the Personnel department in the establishment of a job description and criteria for the position.

There is a small group in Finance consisting of the Systems Co-ordinator, one Systems Analyst, one support stenographer and a second Systems Analyst planned for mid-1977 to be assigned full-time to the Police Department. It seems appropriate that these four people form the nucleus of the Systems group, and immediately upon hiring of the Director of Systems and Data Processing, that they would report to him/her.

There are various functions in other operating departments with pseudo systems responsibilities such as the "Systems Manager" in Social Services, the "Head of Information" in Planning, "Planning and Research" in Police, etc. These functions, however, are tied to the individual department's operations. In every case, the incumbent's background and responsibility is associated with the operation of systems within his particular department rather than what is normally considered a "systems" function, and there is no thought of altering their functions. These people could continue to be key contacts

with the Systems Department and presumably would often represent their departments on project teams and be involved as user representatives in implementation of systems within their areas. Within the Finance Department, the present incumbent Director of Accounting fulfills a similar function to a large degree. It is suggested that he carry this responsibility and no formal systems function exist within Finance. As a service department serving all departments, it seems logical that the Systems Department should report to "The Commissioner of Administrative Services".

COMPUTER FACILITIES

At the present time, much of the Region's computer needs is being met using the City of Hamilton's computer on an across-the-counter arrangement and through dumb terminals. (i.e. - the terminals display the data prepared within the computer to which they are connected; the terminals themselves have no computing ability). There is, however, as noted earlier, an increasing tendency to use other computer facilities mainly through terminals. In the absence of a policy this has been done without any clearly defined overall direction. Assuredly, the Region's use of computers will increase. At this stage of development, it is essential that a policy be established on the purchase of computer services which will best provide for the Region's needs, having regard to availability of service, technical support, software resources, and cost.

The Recommended Approach

After consideration of the alternatives available, it is REMIC's opinion that the best approach to satisfy the Region's need is through the use of one or more intelligent terminals to a large computer facility and an RJE (remote job entry) approach for processing. An intelligent terminal simply stated is a small computer, which is connected over communication lines to a large scale facility. The small computer is equipped for data entry and output and has small amounts of main and auxiliary storage. It can be used on a "stand-alone" basis for very simple jobs and uses the power of the large computer for sophisticated work.

Remote Job Entry describes a processing method whereby running of jobs is initiated at a remote location via an intelligent terminal rather than at the central processing facility. The advantages of this approach are several. The need to transport input documents and output reports to and from the central location are eliminated. The remote location is able to control its own scheduling of runs without competing for priority in the "queue" at the central facility.

There is an obvious movement to the RJE approach through intelligent terminals in recent years in both industry and government circles. This service is being offered by several Canadian firms which have been established usually as subsidiaries of one or more large users. The reader may have heard of Canada Systems Group, the Stelco-Eatons-Gulf subsidiary, Datacrown of Crown Life or other such firms. These firms have one or more very large computers, to which many customers are connected. The customer uses the equipment as little or as much as he wishes and at his own schedule, and only pays for the actual time used. When "on" the user is actually sharing the computer with many other users but this is transparent and for practical purposes the system functions as if there were only one user.

Having decided that the intelligent terminal/RJE approach is the best approach to satisfy the Region's needs, the Committee considered two alternatives - considered purchasing the service from a commercial supplier or negotiating with the City of Hamilton to supply this type of service on their 370/148, in conjunction with its installation in February 1978.

Use of a commercial supplier offers several attractions, all attributable to their size and large customer base. As compared to the City, a commercial supplier would have more "power" available to the customer due to larger central storage; it would have a large number of auxiliary devices; it would have a greater number of software and applications packages available; it would have a greater quantity and variety of expertise available to the user; it would be more "customer oriented" in its efforts to provide service. A commercial supplier would, however, assuredly charge a higher hourly rate for service.

An overriding consideration is the fact that the Model 148 recently placed on order by the City of Hamilton, will have capacity surplus to the City's needs sufficient to handle the Region's needs. Not to use this capacity would be to substantially increase the combined City/Region cost for computer facilities.

It is therefore the Committee's recommendation that the Region enter into negotiations with the City of Hamilton for the City to provide computer facilities through use of one or more intelligent terminals and an RJE approach. We further recommend that the City be asked to lend technical assistance to the Region in the selection, installation, testing, etc., of the proposed facilities. Preliminary discussions with the Director of Systems and Data Processing of the City of Hamilton have indicated his agreement in principle to this approach to supplying the Region's needs - subject to working out the technical implications.

As part of this proposed use of City of Hamilton facilities, we feel that an arrangement should be negotiated with the City whereby the Region has input into, and is aware of all hardware and software planning for the computer facility. It will be impossible for the Region people to do any proper forward planning if they are not fully conversant with any plans which the City may have for changes to the hardware or software; we in fact feel that as a major user of the equipment, the Region's voice should be heard when such plans are being formulated.

To accomplish this, we propose that a joint committee be established with responsibility for staff level approval of all hardware and software decisions and for the creation and administration of policies for scheduling, etc. This would be a senior level committee - it would not be concerned with day to day decisions of scheduling, etc.

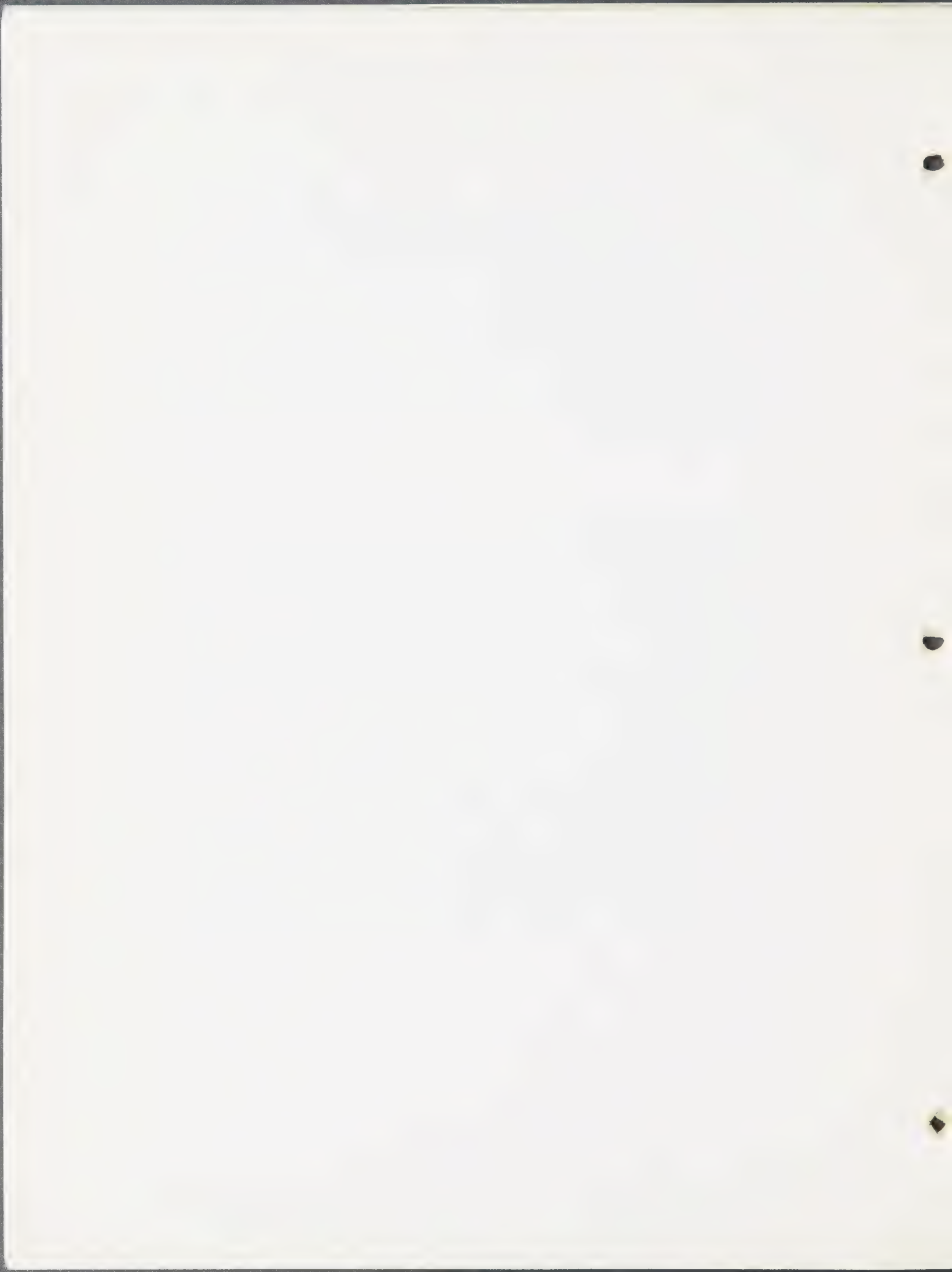
We would propose that the committee be a five person committee, with three representatives from the City and two from the Region (we suggest the Director of Systems and his immediate superior). By weighting the committee in its favour, the City would always be in a position to control the decisions. By having minority representation, the Region would be in a position of having input into deliberations on these important matters, and more importantly, would have full knowledge of all such planning.

Cost

Acquisition of an RJE facility will require budget provision for rental of the terminal and for operating personnel. Presumably, this will be at least partially offset by a reduction in the hourly cost of service from the City of Hamilton. Until we know the hourly rate we will be charged for use of the /148, the cost of the terminal selected, etc., it is impossible to project them. A projection will be included in the 1978 proposed budget.

Other Alternatives Considered

REMIC considered two other alternatives to meeting the Region's needs for computer facilities. The first of these was to acquire a medium-sized computer for the Region's use. This alternative would provide Region staff with the desired control over the priority, scheduling and control of Region work. However, by going this route, the Region would be limiting itself to the power of such a computer and the software packages, etc., which are available with it, and would narrow the future expandability of the facility. Additionally, of course, taking this approach would substantially shut the door to continued co-operation with the City of Hamilton in the use of facilities, sharing of application programs, etc.



The other alternative considered was to acquire a series of mini-computers and install them in each department on a stand-alone basis. Whereas this is an alternative, it is in direct contrast to the whole concept of centralizing systems and data processing to take advantage of the concentration of expertise, packages, software, etc., and more importantly, of common files and data accessibility which we feel is so essential. This alternative was not given serious consideration.

"Ownership" Considerations

Having decided to recommend the RJE approach utilizing the 370/148 recently ordered by the City of Hamilton, REMIC also addressed the question of "ownership" (i.e. - the computer could be owned, rented or leased) of the computer facility. Three alternatives were discussed. Firstly, the present arrangement could continue, whereby the City retains control of the computer and sells time to the Region. Secondly, the situation could be reversed so that the Region takes over control of the computer and sells time to the City; under this arrangement the operating staff of the present City Systems and Data Processing Department would be transferred to the Region. The third alternative is for joint ownership.

In considering this question, REMIC noted that the logical location for the computer facility is in the present location at City Hall, where the necessary special facilities for power, air conditioning, etc., are available. It may be considered more practical, therefore, for the facility to remain under City control. Another consideration is that the five area municipalities, other than Hamilton, might be less reluctant to use a "Region" facility as opposed to a "City" facility.

We did not, however, consider these to be factors of sufficient importance, to influence any decision which may be made as part of an overall policy. We recommend that the question of computer "ownership" be considered as part of any study which may be made into the placement of this and similar services. Regardless of the decision made in this matter, it should have no influence on the recommended hardware configuration.

Long-Range Proposal

Our thoughts for a long range approach are not definitive at this time. Simply stated, they are that the Region extend to other bodies in the public sector in this area, an invitation to consider the joint investigation of a co-operative venture to adopt a single approach to serve the needs of all the co-operating organizations.

We do not want to presuppose any decisions which might be made by such a consortium of public bodies. We can foresee, however, the possibility of establishing an independent organization under a board representing all the participating bodies. The organization would have a large scale computer and would sell service back to the participants on any number of methods, depending on the participants needs. We also foresee such an organization as being the focal point for the development of teams to build common systems for mutual use.

We realize that any results from such an undertaking would be several years to come to fruition. It would be necessary to conduct a thorough and exhaustive feasibility study probably through the use of a consultant. For this reason, we want to emphasize that any decision on this recommendation should not in any way affect the decision on the short-term recommendation.

We would suggest that the decision as to what public bodies would be invited to participate in consideration of such a venture should be left with Regional Council. As a minimum, however, we would suggest that invitations be extended to the six area municipalities, the three school boards in the area and the Hamilton District Health Council. Thought should be given to including all area PUC's plus McMaster University and Mohawk College, and possibly our sister Regions of Halton and Haldimand-Norfolk, and their member municipalities.

NEEDS/PRIORITIES

The Need In General

There is a tendency in the Region for development of individual systems and information gathering techniques within each department. There would seem to be two primary reasons for this situation. The problem is not unique in Hamilton-Wentworth, and seems to be common in municipal governments; this is undoubtedly due to the vertical structure of government organization. The second unfortunate reason is that in the absence of any other resources, each department (indeed often each section within a department) has been forced to develop its own approach to processing, and information gathering. The absence of any co-ordination and standardization is painfully obvious. This situation has several drawbacks - the need to re-invent the wheel many times, duplication of the information gathering effort and lack of consistency (cut-off times, amount of detail, etc.,) in information passed on to higher level management.

It is a credit to senior management within the Region that they are aware of this need and anxious to do something about it. The interviewer noted a very aggressive attitude among management personnel to work towards integrated systems and towards the use of more modern and sophisticated approaches to management information. He also noted, however, a lack of experience and depth in these areas and a need for assistance from experienced practitioners to provide technical guidance. The situation is very opportune, for an aggressive approach to development of truly integrated systems using modern techniques. The present

management staff is willing and anxious to work to this end, with the assistance of a qualified systems group and the result should be a significant improvement in operational information.

In line with this general thinking, the approach must be adopted that every Region system will be considered a corporate resource and no department will be permitted to exercise exclusive ownership. Obviously, most systems will have a key user and this key user will take the forefront in the system design. All systems, however, should be constructed so that the information within is available and readily accessible to all departments. Obviously, there will be exceptions where confidentiality is a concern (e.g. personnel data, Social Service client data, Police files). Even in these cases, however, certain summary information is used by other departments and should be available. So that all data will be available to all departments, accumulation of pockets of data in individual departments should be discouraged.

All systems should be built on a team approach. Every department that has any possibility of using the system should be represented on the team. Obviously, the department directly involved will be more heavily represented, and in most cases the team leader will be from this department. There should always of course be systems representation on the team, but the systems representative should not normally be the team leader. The systems representative should have responsibility for

the technical implementation of the team's decisions but in every case the team should be careful to make sure that the systems man's function is to serve the user and provide the technical implementation of the decisions reached. He should never be in a position of dictating to the user.

Major systems to be implemented should be chosen carefully and researched thoroughly before being implemented. They should be comprehensive and all-encompassing of the Region's needs. The temptation to sacrifice thoroughness and completeness for quicker implementation should be avoided.

All computer systems should be constructed to use the most modern technology available. Among other things, this includes use of the data base approach to file organization. Systems should be constructed to provide maximum user control and independence from systems personnel in maintenance of tables and files.

The trend for users to interact directly with the system and to develop their output reportings from base files, should be encouraged. Systems should act as a training and resource agency in this arrangement.

Co-operation between the Region and the six area municipalities should be encouraged by the creation of a committee which would meet periodically with the specific responsibility to explore co-operative approaches to creating systems which could be used by more than one of the co-operating municipalities. All systems developed for the Region administration should be constructed so that they are adaptable for use by the area municipalities.

Application Priorities

As mentioned in Section 1.3 of this report, work on a Payroll/Personnel system, known as PAYPER, has been progressing simultaneously with the work on this report. Systems specification for PAYPER have been developed for approval by management; programming and implementation work can begin following this approval.

The PAYPER system is the first major system developed by Regional personnel. Documentation standards, file approaches, etc., are being developed in conjunction with this system and it is felt that they should form the basis of standards for all other systems developed in the Region. The system has been developed as the first phase of the total accounting and management information system, and should be implemented before any further work is done in these areas. The full systems documentation is available for review if needed. Approval of the PAYPER system and implementation should be the top priority for Region systems work.

There is a definite need for a location based information system. It will take many months of study to develop the needs for data, involving all departments of the Region, and to write specifications. Work on the systems specification phase of this project could be done simultaneous with the implementation of PAYPER. A project team should be constructed before the end of 1977 to begin this task. The team should include a systems analyst working on it full time, and representation of all Regional departments. There should be particularly heavy involvement from Planning and probably the project leader should be drawn from this department.

There is a sense of urgency within the Police Department to take a look at this department's management information needs. This should include a review of the Master Plan for the Development of Management Information Systems done by Decision Dynamics, a review of the CADRE proposal, a review of the work being done at McMaster University, and a review of the proposals of PAYPER and related accounting and management information systems being considered for the Region administration. Present plans are to add a systems analyst to the Systems Section of the Finance Department during 1977, and assign him full time to the Police Department to review the department's total needs in detail. This review will result in presentation of a plan for overall strategy. Understandably, operational systems for the Police do not in many cases lend themselves to integration with systems for other departments and should be developed for and by the Police, wherever possible in co-operation with other police departments and agencies. Operational systems, however, should be developed so that they feed record-keeping and management information needs. It would

be unwise to develop management information, accounting, budget and payroll systems, etc., for the Police Department apart from the balance of the Region. One of the criteria for the study to be done by the Police Department Systems Analyst should be that he develop a good understanding of administrative systems used in other departments and that the overall strategy for the Police Department includes use of systems developed for the total Region administration as far as practical.

Further work on an integrated approach to accounting, budgeting, management information and operational control systems should begin while PAYPER is in the programming and implementation phases. The basis for this has been established during the development of PAYPER, and it will be a continuing effort. It is recommended that when establishing the project team for this task, there be a deliberate effort to overlap personnel with the PAYPER project team.

It is suggested that no priorities be assigned beyond the four suggested above at this time. There are, however, two projects which could be undertaken during the same time period, without affecting the recommended priority queue. The first of these involves an addition to the existing General Welfare Assistance system involving Day Care and Purchased Services. The existing GWA system was built very recently by the City of Hamilton Systems Department in co-operation with Regional Social Services, and it is recommended that a contract be negotiated with the City to carry out the project.

The second involves the need for a financial modelling system. There are several such packages commercially available and there exists within the Capital Program Section of the Finance Department, a staff eager to work with a supplier to develop or customize a system for the Region's needs. Both of these projects could move forward simultaneous with the major projects indicated, without interferring with their implementation.

It should be the responsibility of REMIC to review priorities and present a plan for a three year program to management in the fall of each year. This recommendation should be completed by October 1 so that its budget implications can be included in the ensuing year's budget.

R E C O M M E N D A T I O N S



REMIC

- A 1 That the existence and function of REMIC (as specified in the Terms of Reference) be continued; that the committee shift its emphasis towards developmental projects and improved management information.
- A 2 That REMIC undertake a continuing program of education for middle and upper management personnel to improve the appreciation of management information available and of the concepts, capabilities and potential uses of computers and other modern management tools.
- A 3 That annually by October 1, REMIC present a three year program for systems activity to management.
- A 4 That upon approval of the recommendations of this study, REMIC be made responsible for the monitoring of their implementation.
- A 5 That the Finance Department be represented on REMIC by other than a Systems person.
- A 6 That the Systems Department be represented on REMIC by one or more (to be flexible to meet particular needs) persons, as technical resource persons, without voting privileges.

SYSTEMS FUNCTION

B 1. That the Region establish a Systems Department with responsibility for:

- i) Co-ordination of all systems activity
- ii) Design and implementation of all computer-based systems
- iii) Co-ordination and scheduling of all data processing activities and facilities
- iv) Design and implementation of all business communication systems
- v) Design, implementation and administration of a forms control and co-ordination program
- vi) Design, implementation and administration of a standard procedure program

- B 2. i) That the Systems Department be the responsibility of a Director of Systems and Data Processing
- ii) That the Director of Systems and Data Processing answer to the Commissioner of Administrative Services
- iii) That a new position be authorized - Director of Systems and Data Processing, and the position be advertised immediately

- B 3. That the four systems positions in the Finance Department be transferred to the Systems Section at a time mutually acceptable to the Commissioner of Finance and the Commissioner of Administrative Services.
- B 4. That three new classifications be authorized: -
- PROGRAMMER I - with responsibilities and remuneration similar to that of the City of Hamilton.
- PROGRAMMER II - with responsibilities and remuneration similar to that of the City of Hamilton.
- JUNIOR SYSTEMS ANALYST - being a new position design to accommodate persons hired for systems work, who do not qualify as a Systems Analyst, because of a lack of training or experience.
- B 5. i) That the principle be accepted of gradually building a staff to serve the Region's needs for programming and systems requirements.
- ii) That this principle include the implicit understanding that this will be implemented on the basis that there will be an equivalent (or greater) reduction in the cost of purchase of services.
- iii) That requests for staff increase be originated by the Director of Systems and Data Processing, as he deems advisable during 1977 and 1978 and that such requests be accompanied by a request for a reduction in the budget for services purchased by an amount equal to a greater than the cost of the additional staff including all salaries, benefits, etc.

- iv) That in the event that a reduction in purchase of services from the City of Hamilton creates a staff surplus in the City (because of the demands of City departments and normal staff turnover, we think this improbable) such staff will be given first priority in selection of Region staff.
- v) That the progress of the gradual staff build-up be reviewed at the end of 1978, and that the Director of Systems and Data Processing present a report at that time, detailing the cost and service experience to that point.

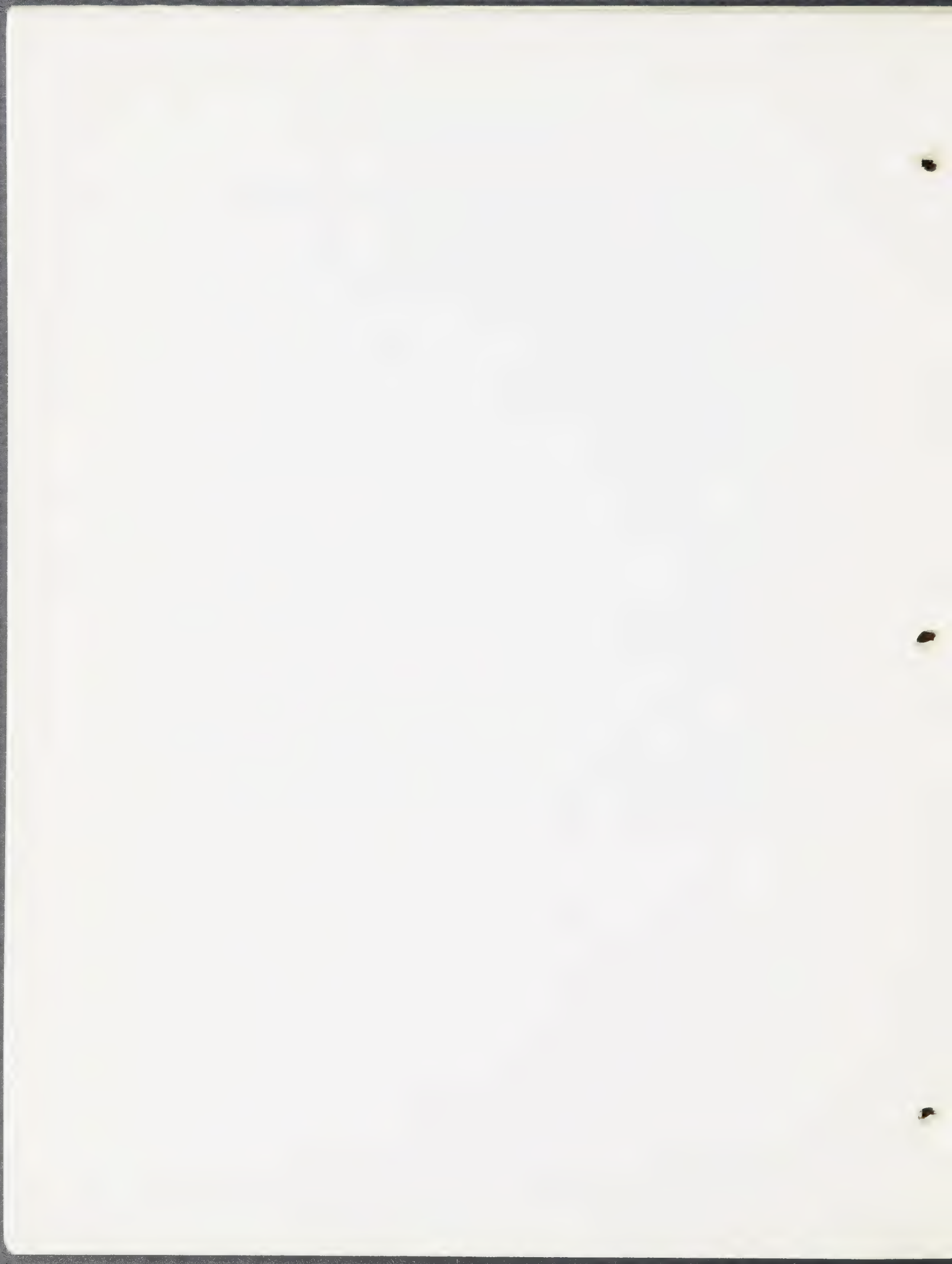
- B 6. i) That user departments be encouraged to develop information, organization and retrieval systems, on an interactive basis, on their own initiation.
- ii) That Systems be responsible for training appropriate user personnel in user-oriented retrieval approaches, etc., and for supplying technical assistance as required.

COMPUTER FACILITIES

- C 1. That a policy be established whereby the Region will make use of "outside" computer equipment via an RJE approach through intelligent terminal facilities to be installed on Region premises.
2. i) That City of Hamilton computer facilities be used, if the City is agreeable to such an arrangement and able to meet the Region's requirements of hardware and software facilities.
- ii) That the Director of Systems and Data Processing be authorized to negotiate acceptable arrangements with City representatives.
- iii) That any agreement with the City include provision that a committee be established with responsibility for hardware and software planning and administration of operating policies for scheduling, etc., and that the Region have representation on such committee.
3. That in the event the City is not willing or able to enter into such an arrangement, the Region develop such an arrangement with a commercial supplier of such facilities, but that such arrangements be on the basis that all applications so developed will be migratable to the City of Hamilton's computer if, as and when the City is willing and able to enter into such an arrangement.
4. That the Council of the Region extend to the six area municipalities and other public bodies, an invitation to appoint a representative to an ad hoc group charged with consideration of the feasibility of establishing a computer facility to serve all the participants.

PROJECTS/PRIORITIES

- D 1. That approval of the PAYPER system be given on the basis of specifications in the documentation of that system.
- D 2. That a team be constructed to begin the first phase of study for a proposed location oriented information system; that a systems analyst be assigned to this project full time.
- D 3. That the Systems Analyst assigned to the Police Department develop an integrated plan to serve departments needs with the criteria that Police Department systems should tie-in as much is as practical with total Region administration systems.
- D 4. During the later stages of the implementation of PAYPER, work be commenced on the next phase (to be determined by study) of totally integrated, management information, operational control and budget reporting systems.
- D 5. That on or before October 1 of each year, REMIC present to management a three year plan for systems activity; that management indicate its approval of the plan no later than November 1, and the ensuing year's budget make provision for the approved plan.

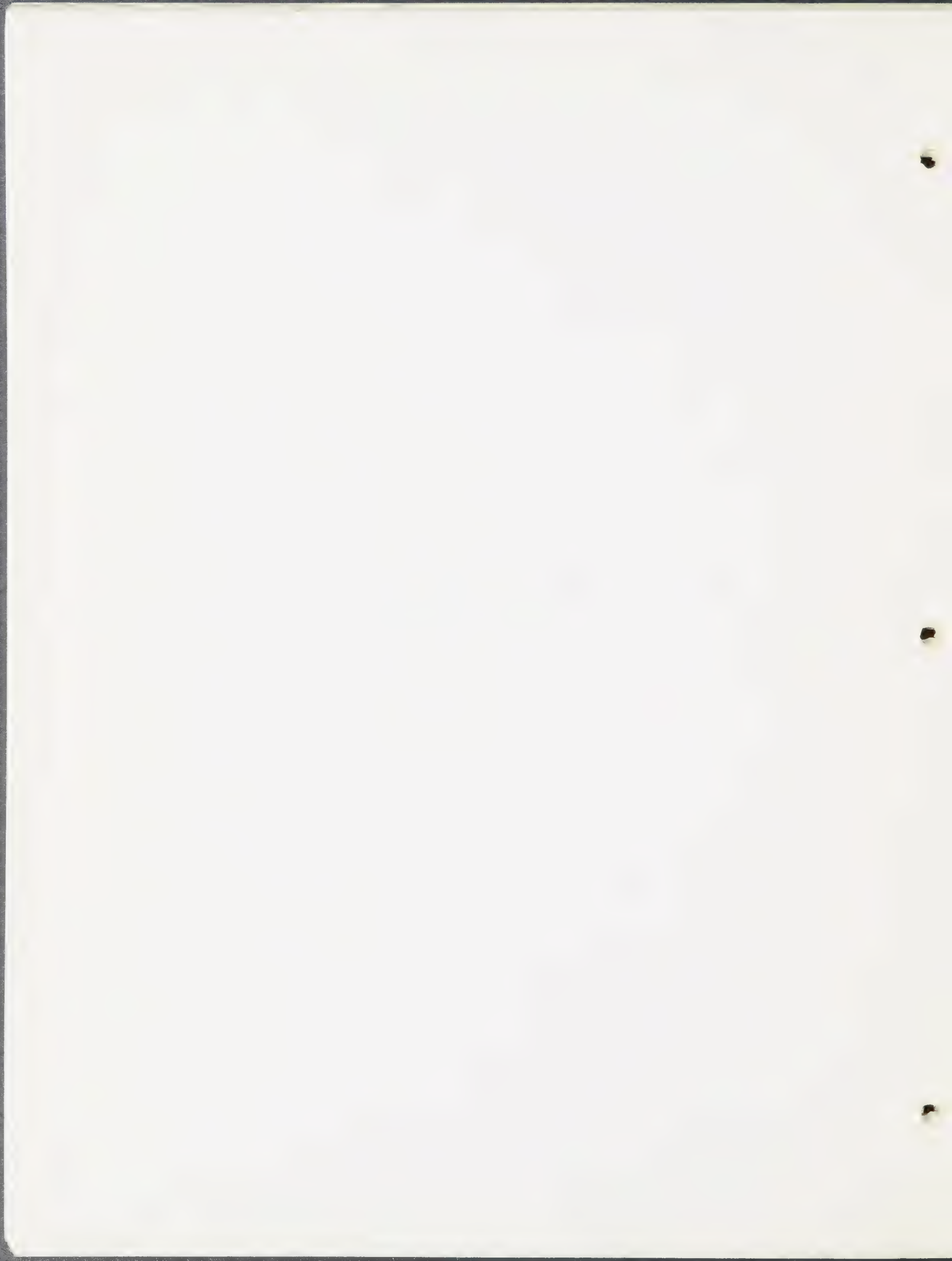


TIMETABLE

The following recommended timetable should be considered tentative only. It should be reviewed and be subject to revisions proposed by the Director of Systems and Data Processing.

- | | |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| July 15, 1977 | <ul style="list-style-type: none">- Approve recommendations in principle- Approve new positions recommended- Advertise for Director of Systems and Data Processing |
| September 1, 1977 | <ul style="list-style-type: none">- Director commences employment- Transfer Finance Systems staff |
| September 15, 1977 | <ul style="list-style-type: none">- Commence staff level negotiations with City of Hamilton for use of City facilities via RJE approach |
| October 1 - December 31, 1977 | <ul style="list-style-type: none">- Hire initial systems analysts and programmers, to commence gradual creation of Systems Section- Transfer appropriate budget funds from "purchased service" to "personnel" |
| December 1, 1977 | <ul style="list-style-type: none">- Complete negotiations with City- Begin search for front-end computer |
| April 1, 1978 | <ul style="list-style-type: none">- Place order for front-end computer |
| September 1, 1978 | <ul style="list-style-type: none">- Accept delivery front-end computer |
| January 1, 1979 | <ul style="list-style-type: none">- Implement first major system (PAYPER) on RJE facilities |

C O S T E S T I M A T E



COST ESTIMATE

Attached are shown the 1977 budgetted costs for systems and data processing purchased services and a estimate of what these costs would be, were all the recommendations of this report in effect, for all of 1977. We have chosen to use 1977 as the year for comparison, rather than a future year, to eliminate any confusion caused by variances in the requirement for systems and programming service and by inflated dollars.

Most of the figures in the estimate are based on arbitrary percentage projection of service transfer. They are, however, our best estimate of what will happen. The 1977 budget is based on an hourly rate of \$188.09 (1976 rate plus estimated 8% increase for 1977), for computer usage from the City of Hamilton.

We cannot emphasize too strongly two points. Firstly, it is not the intention that a complete systems/programming staff would be engaged immediately. Rather it is intended to do this gradually over several years as work migrates to Region staff, with budget monies being switched from "purchased service" to "salaries", as appropriate. Secondly, the staff complement shown is not intended to indicate the precise number in each category; this will be determined as the staff is built in line with needs; the numbers shown are to indicate a possible complement, for comparison purposes.

BUDGETTED 1977 COSTS FOR PURCHASED SERVICES

Direct Systems and Data Processing costs approved by Council:

General Government	\$270,000	
Planning & Development	60,000	
Engineering	8,500	
Social Services	128,500	
Metered Water	<u>43,150</u>	
		\$510,150

Estimated Systems & Data Processing content of other projects
approved by Council:

Engineering	18,000	
Police	<u>8,280</u>	
		<u>26,280</u>

TOTAL BUDGETTED 1977 COSTS		<u>\$536,430</u>
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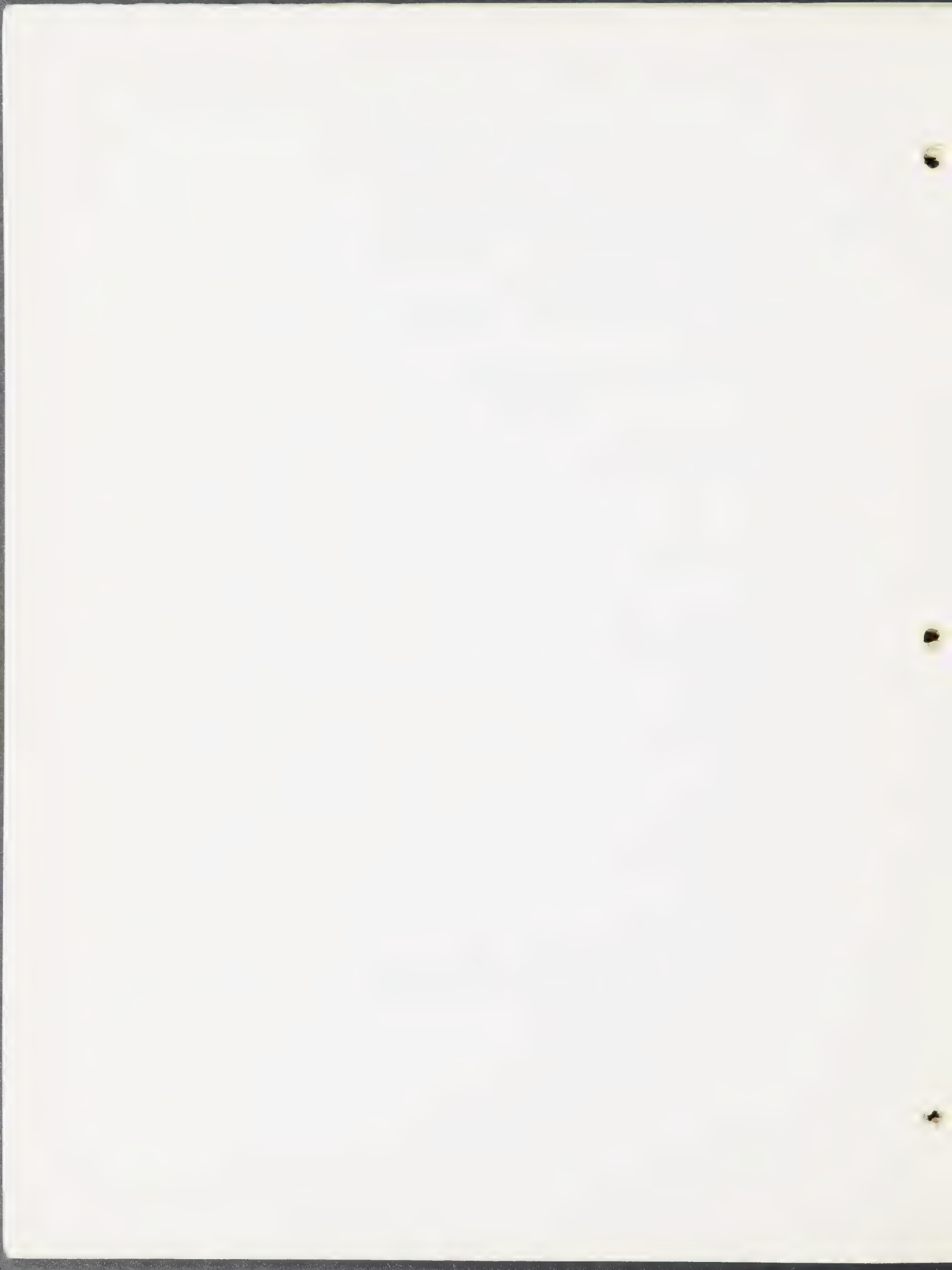
Estimated split of source of 1977 budgetted costs:

City of Hamilton - Systems & Programming	\$214,500
City of Hamilton - Data Processing	241,000
Other Suppliers	<u>80,930</u>
	\$536,430

ESTIMATED COST DIFFERENCES

Reduction in use of City of Hamilton computer hours charged made possible by use of Front End computer for some functions	\$241,000 x 25% - \$	60,250	
Reduction in use of purchased service from other suppliers	80,930 x 50% -	40,465	
Reduction in rate charged by City of Hamilton due to RJE	(241,000 - 60,250)x 10% -	18,075	
Reduction in use of City of Hamilton systems and programming service	214,500 x 75% -	<u>162,875</u>	\$281,665
Rental - Front End Computer			30,000
Additional Staff			
- Director of Systems and Data Processing		28,000	
- Junior Systems Analyst (1)		20,312	
- Programmer I (1)		20,312	
- Programmer II (3)		48,486	
- Computer Operator		14,253	
- Junior Operator/Clerk		<u>12,000</u>	
		143,363	
Fringe Benefits @ 17%		<u>24,372</u>	167,735
Space 1200 sq ft @ 6.50 mth		<u>90,000</u>	287,735
Net Annual Additional Cost			<u>\$ 6,070</u>

*In addition there would be a one time cost for desks, etc., as each new staff member was added, plus a supply of storage media, etc., estimated at \$10,000 total.



S U M M A R Y

SUMMARY

The total recommendations of this report are based on observations of the present structure and recommendations from management personnel. The present systems functions within the Region are on a rather unorganized basis, and adoption of the recommendations of this report will bring them to a more structured situation to the overall benefit of the Region.

Adoption of this report will put into practice a modis operendi whereby no system will be "owned" by any department and all systems within the Region will be developed on a team approach and available to all potential users. Further than this, systems will be developed so that after implementation they will be under control of user personnel not technical systems people. Once a system has been developed and is functioning, user department staff will be trained so that they can develop systems to produce specific outputs as required on an interactive basis.

The report also suggests close co-operation between Region personnel and the area municipalities where appropriate. Region Systems personnel will be available to area municipalities as required, and will act as catalysts in the continued development of systems on a co-operative basis by the area municipalities.

In order to fulfill the preceeding goals, it is suggested that a Systems department be established in the Region, capable of handling normal systems and programming demands. Major projects and peak demands would be offered to tender. The technical resources of the City of Hamilton would continue to be used, especially on existing systems which were created by the City. Region management would have better control of this "in-house" resource, than is possible with purchased service.

It is suggested this Systems section be considered as the first of several which will eventually constitute an Administrative Services Department.

To properly control its information processing needs, the Region must have access to computer facilities. This can be satisfied without the expense of purchasing or renting a large-scale computer, by the use of a remote job entry approach. Several commercial houses offer such an approach, but in order to make greater use of the planned computer facilities of the City of Hamilton it is suggested that if arrangements can be made with the City, this facility be used on a RJE basis.

Precise equipment and personnel costs will have to be determined and included in the annual budget presented to Regional Council for approval.

Preliminary estimates, however, indicate that the annual costs after implementation of the recommendation in this report will be roughly the same as present costs. Thus for approximately the same dollars, the Region will have many advantages, principally that of giving senior management closer control over its systems and data processing activities.

Finally, it is suggested that Regional Council extend to the Region's member municipalities and other public bodies an invitation to participate together in the study of a possible joint acquisition of a large scale computer to serve all the participants.

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